EXHIBIT
1

Notice of References Cited	Application/Control No. 09/970,015	Applicant(s)/Patent Under Reexamination VEGLIANTE ET AL.	
	Examiner SEAN M. MICHALSKI	Art Unit 3724	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-4,856,975	08-1989	Gearhart, Kenton	425/131.1
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	"Phthalate Ester Plasticizers-Why and How They Are Used", P. R. Graham, Environmental Health Perspectives, Vol. 3, (Jan., 1973), pp. 8, Published by: The National Institute of Environmental Health Sciences (NIEHS).
	V	Artifact 09741521MA from copending case 09/741,521 submitted by a third party. 07/1999.
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Plasticizer Uses and Markets

No single plasticizer exhibits the perfect balance of properties for every application. Each end-use will demand certain essential properties. To achieve this balance some properties of lower importance must be sacrificed to some extent. In the judicious selection of the "proper" plasticizer system for a given application, the first consideration would be compatibility. Then, depending upon the specific application, other criteria relating to processing, performance, and permanence properties would be obtained. A partial checklist might be as shown in Table 1.

Table 1. Criteria relating to processing, performance, and permanence properties.

Processing	Performance	Permanence
Roll milling	Toxicity	Migration resistance
Calendering	Color	Volatility
Dry blending	Odor	Extraction resistance
Banburying	Flexibility	Outdoor aging
Extrusion	Softness	Light stability
Solution	Mechanical properties	Heat sensitivity
Foaming	Electrical properties	Fungal resistance
Heat sealing	Flame retardance	

It should also be remembered that for each application the desirable balance of properties must be achieved within a prescribed cost framework.

Table 2 lists selected performance criteria for a number of plasticizer types, including both branched-chain and linear phthalates. The results from the permanence property evaluations were obtained by using standard accelerated testing procedures. These data compare classes of products and are not meant to characterize individual plasticizers within these classes. The measurement for each property (H_2O extraction, volatility, oil resistance, and migration) is expressed in terms of per cent weight loss. Therefore, the higher the number, the poorer the performance. The low-temperature efficiency value is the temperature at which the modulus of rigidity is 135,000 psi, making those systems with the lowest values the most efficient in flexibilizing poly(vinyl chloride) at low temperatures. The room temperature modulus is the flexibility of the system at room temperature. Again, the lower the modulus, the better the performance is.

The adipates, being linear aliphatic esters, are used primarily for their plasticizing efficiency. They flexibilize poly(vinyl chloride) well at both room temperature and extremely low temperature. This efficiency is obtained at the expense of permanence. The aliphatic structure leads to poor hydrocarbon resistance, and the relatively low molecular weight causes high volatility. The

Table 2. Performance criteria for selection of plasticizers.[a]

	Permanence properties,				Efficiency	
	H_2O, %	Volatility, %	Oil, %	Migration %	Low temp, °C	R.T. modulus, psi
Adipate	0.10	14	70	21	-66	630
Phthalate (branched)	0.03	5	34	4	-39	830
Phthalate (linear)	0.02	2	44	2	-48	850
Phosphate ester	0.02	7	7	9	-39	700
Trimellitate	0.01	1	82	2	-42	850
Polymeric ester	0.10	2	2	0.4	-20	1300

[a] 40% plasticizer in PVC.

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